REMARKS

Favorable reconsideration is respectfully requested.

The claims are 23 to 36.

The above amendment corrects minor informalities in claims 27 to 29 and presents new claims 33 to 36. Support for the new claims is evident e.g. from page 17, lines 5 to 7.

With regard to new claim 36, it is the same as claim 23 but in "consisting essentially of" format.

The significance of the foregoing amendments will become further apparent from the remarks below.

Claims 23 to 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 5,972,052) and Maeda et al. (U.S. Patent No. 5,959,831).

This rejection is respectfully traversed.

A brief discussion of the present invention will be of assistance in appreciating Applicants' reasons for traversal of the rejection.

The present invention provides a method of producing an electrolytic capacitor wherein a plurality of through-holes are formed through a valve metal foil, and then an electrolytically-formed conductive polymer layer grows through the through-holes during polymerization, i.e. in the thickness direction of the valve metal foil.

The electrolytically-formed conductive polymer of electrolysis formation can grow in the through holes quickly and uniformly as disclosed e.g. on page 10, lines 17 to 25.

Kobayashi, on the other hand, does not even relate to an electrolytic capacitor including through holes.

The Official Action relies on the disclosure of Kobayashi, column 4, lines 60 to 65 as disclosing through holes, however, all that is mentioned is a porous body and, as is well known by those skilled in the art, pores are not through holes.

In this regard, see for example Tanaka et al., ESPEC Technology Report No. 3, pages 21 to 24 (1997), copy enclosed, which depicts through holes. See especially Fig. 1 on page 21 which depicts a through hole as a cylindrical hole going through the body in which it is formed. Such through holes are clearly different from pores in the porous body of Kobayashi which are random voids- through holes are not. Moreover, voids, e.g., in a ceramic body, have no particular shape-

through holes do.

The Official Action also refers to column 9, lines 32 to 46 of Kobayashi in connection with through holes but again, no reference to through holes is seen.

It is clear that the Official Action equates pores with through holes without any support for such position.

On page 4 of the Official Action, it is acknowledged that Kobayashi does not specifically mention its electrolytically-formed conductive polymer layer as growing through the through holes in the thickness direction. This is not surprising since, as stated above, Kobayashi simply does not disclose through holes but only pores.

The porous body of Kobayashi is excluded by the "consisting essentially of" format of claim 36.

Nor are the deficiencies of Kobayashi overcome by the disclosure of Maeda who also does not disclose through holes.

Again, Maeda only relates to a porous capacitor chip. See column 3, line 56.

An essential feature of the present invention is the step which forms the through holes which penetrate the valve metal foil in the thickness direction.

There are other significant differences between the cited references and the present invention as will now be discussed.

The capacitor of Kobayashi is provided with a first conductive polymer layer and a second conductive polymer layer. The first conductive polymer layer is for filling pores inside a porous body. The first conductive polymer layer grows inside of pores in a random direction rather than growing in the thickness direction of the through holes as presently recited.

As for Maeda, it is directed to a method for manufacturing a sintered tantalum solid electrolytic capacitor (which is porous) and not a foil capacitor (which is non-porous).

Maeda discloses a step of forming a tantalum pentoxide dielectric coating, i.e., an electrical insulating coating, by an anodic oxidation. There is no disclosure by Maeda where a conductive polymer layer can be formed by an electrolytic-forming method.

In Maeda, a conductive coating of manganese dioxide is formed, without applying an electric field, onto the tantalum pentoxide dielectric coating which tantalum pentoxide dielectric coating has electrical insulation. Thus, the conductive polymer is not formed in the tantalum

solid electrolytic capacitor of Maeda.

Further, it is apparent that the sintered tantalum capacitor of Maeda does not have penetrating through holes.

The porous body of Maeda is excluded by the "consisting essentially of" format of claim 36.

The only point in common with the present invention and Maeda is that both apply an electric field to form the coating, however, the context in which the coating is formed and the coating itself are completely different.

While no motivation is seen to combine the cited references, even if there were such motivation, the complete absence of through holes in the cited references renders the references, alone or combined, completely unsuggestive of the present invention in which causing the electrolytically-formed conductive polymer to grow through the through holes in the thickness direction of the valve metal foil is an essential feature.

Please see the attached Table 1, setting forth the above discussed differences between the presently claimed process and those of the cited references.

None of the cited references teach nor suggest electrolytically-formed conductive polymer in through holes in the thickness direction.

For the foregoing reasons, it is apparent that the rejection on prior art is completely untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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Table 1: Comparison of the Present Application with Cited References

	present application 09/633,098	Kobayashi U.S. 5,972,052	Maeda U.S. 5,959,831
anode valve metal foil	aluminum foil; 1	porous sintered tantalum pellet; 2 rolled foil	porous sintered tantalum capacitor chip; A1
dielectric layer	aluminum oxide film; 3	tantalum oxide layer; 3	dielectric coating layer of tantalum pentoxide;
solid electrolyte layer	eletrolytically-formed conductive polymer layer (polypyrrole); 4	conductive polymer layer; 4	manganese dioxide layer; A4 (thermally decomposed of manganese nitrate solution)
through-holes	through-holes; 20 (formed consciously, e.g. by using a punching machine)	void existing in the sintered pellet (not shown) ** Note that the void is filled with the conductive polymer layer 4 (shown in Fig. 4)	void existing in the sintered capacitor chip (not shown)
primary steps in a fabrication method	forming the through-holes through the valve metal foil; forming the dielectric oxide layer formed by anodizing the valve metal foil; forming a manganese oxide layer on the dielectric oxide layer, if necessary (in examples 4 to 6); attaching an electrolyzing electrode to the valve metal foil; immersing the valve metal foil in a conductive monomer solution; electrolyzing the solution to polymerize the monomer; making the electrolytically-formed conductive polymer grow through the through-holes.	preparing the tantalum pellet by a sintering process, which has a porosity of 70%; forming the tantalum oxide layer on the surface of the pellet by anodizing; forming a first conductive polymer layer made of polypyrrole: coating the first conductive polymer layer with NMP; spraying a polypyrrole powder on the coated first conductive polymer layer; adhering the polypyrrole powder onto the first conductive polymer layer; forming a second conductive polymer layer made of polypyrrole. ** Note that the second conductive polymer layer 6 is not formed within the void	preparing the porous sintered tantalum capacitor chip A1 including an anode wire A2; forming tantalum pentoxide coating by anodizing; immersing the dielectrically coated chip A1 into a manganese nitrate solution; forming solid electrolyte of manganese dioxide on the dielectric coating by baking the solution

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primary steps in a fabrication method	forming the through-holes through the valve metal foil; forming the dielectric oxide layer formed by anodizing the valve metal foil; forming a manganese oxide layer on the dielectric oxide layer, if necessary (in examples 4 to 6); attaching an electrolyzing electrode to the valve metal foil; immersing the valve metal foil in a conductive monomer solution; electrolyzing the solution to polymerize the monomer; making the electrolytically-formed conductive polymer grow through the through-holes.	preparing the tantalum pellet by a sintering process, which has a porosity of 70%; forming the tantalum oxide layer on the surface of the pellet by anodizing; forming a first conductive polymer layer made of polypyrrole: coating the first conductive polymer layer with NMP; spraying a polypyrrole powder on the coated first conductive polymer layer; adhering the polypyrrole powder onto the first conductive polymer layer; forming a second conductive polymer layer made of polypyrrole. ** Note that the second conductive polymer layer 6 is not formed within the void	preparing the porous sintered tantalum capacitor chip A1 including an anode wire A2; forming tantalum pentoxide coating by anodizing; immersing the dielectrically coated chip A1 into a manganese nitrate solution; forming solid electrolyte of manganese dioxide on the dielectric coating by baking the solution